

In response to the outstanding Office Action, please amend the above-identified application as follows:

IN THE CLAIMS

Please cancel claims 8-16.

Please amend the claims as follows:

- 1 1. (Amended) An apparatus comprising:  
2       a first reaction chamber;  
3       a gas source coupled to the first reaction chamber to supply  
4       a nitrogen gas to the first reaction chamber [comprising  
5       constituents adapted to react with a substrate in a process step];  
6       an excitation energy source coupled to the first reaction  
7       chamber to generate a nitrogen plasma comprising ions and radicals  
8       from the nitrogen gas; and  
9       a second reaction chamber adapted to house a substrate at a  
10      site in the second reaction chamber,  
11       wherein the first reaction chamber is coupled to the second  
12      reaction chamber and separated from the substrate site by a  
13      distance equivalent to the lifetime of the ions at a plasma  
14      generation rate such that the radicals react with the substrate in  
15      a process conversion step.

1 2. (Amended) The apparatus of claim 1, wherein the excitation  
A1 3 energy source supplies energy having a microwave frequency to  
Cn1 3 generate a plasma from [a] the nitrogen gas.

1 4. (Amended) The apparatus of claim 1, wherein [the first  
A2 2 reaction chamber is adapted to generate a nitrogen plasma, and]  
A2 3 the dimensions of the first reaction chamber are configured such  
4 that substantially all of the ions generated by the nitrogen  
5 plasma are changed from an ionic state to a charge neutral state  
6 within the first reaction chamber.

1 6. (Amended) An apparatus for exposing a substrate to plasma,  
2 comprising:

A3 a first reaction chamber;  
A4 means for supplying a nitrogen gas to the first reaction  
S13 chamber[, the gas comprising constituents adapted to react with a  
5 substrate in a process step];  
6 means for [supplying a] generating a plasma from the nitrogen  
7 gas, the plasma comprising ions and radicals [to the first  
8 reaction chamber];  
9 10 a second reaction chamber having means for housing a  
11 substrate; and

12 means for providing the plasma to the second reaction chamber  
13 substantially free of ions such that the radicals react with a  
14 substrate in a process conversion step.

1 17. (Amended) A system for reacting a plasma with a substrate,  
2 comprising:

3 a first chamber;  
4 a gas source coupled to the first chamber comprising  
5 constituents adapted to react with a substrate;  
6 an energy source coupled to the first chamber;  
7 a second chamber configured to house a substrate for  
8 processing;

9 a system controller configured to control the introduction of  
10 a gas from the gas source into the first chamber and to control  
11 the introduction of an energy from the energy source; and  
12 a memory coupled to the controller comprising a computer-  
13 readable medium having a computer-readable program embodied  
14 therein for directing operation of the system, the computer-  
15 readable program comprising:

16 instructions for controlling the gas source and the energy  
17 source to convert a portion of a gas supplied by the gas source  
18 into a plasma comprising plasma ions and radicals and to deliver  
19 the plasma to the second chamber substantially free of ions to